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W. G. BRYANT

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SHIP BUILDER'S WORK ASSEMBLING AND ALIGNING JACK

Filed April 14, 1944

3 Sheets-Sheet 1

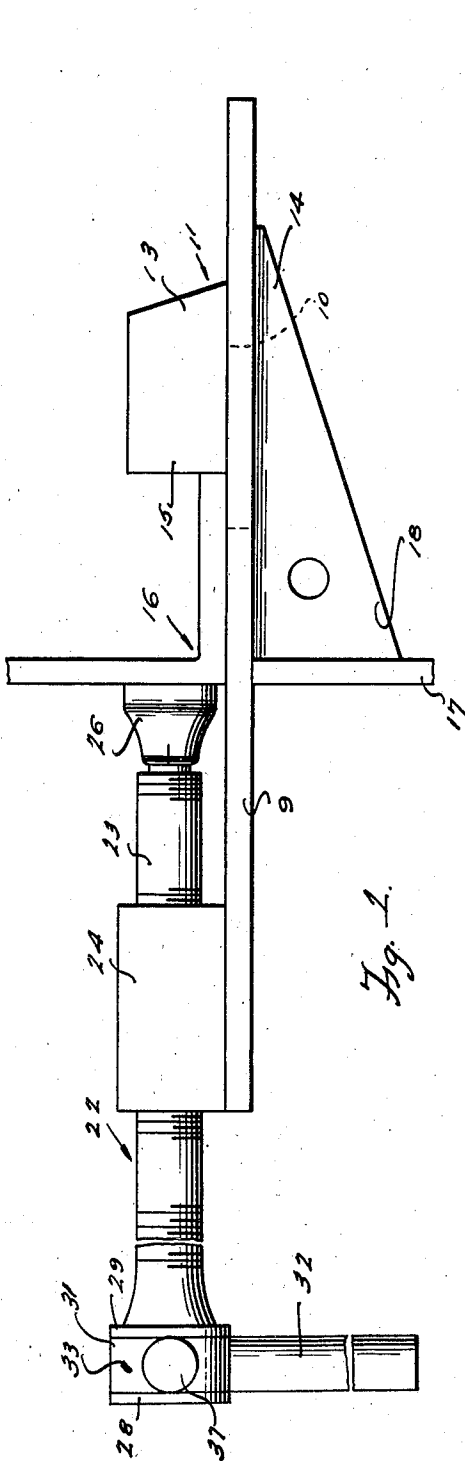


Fig. 1.

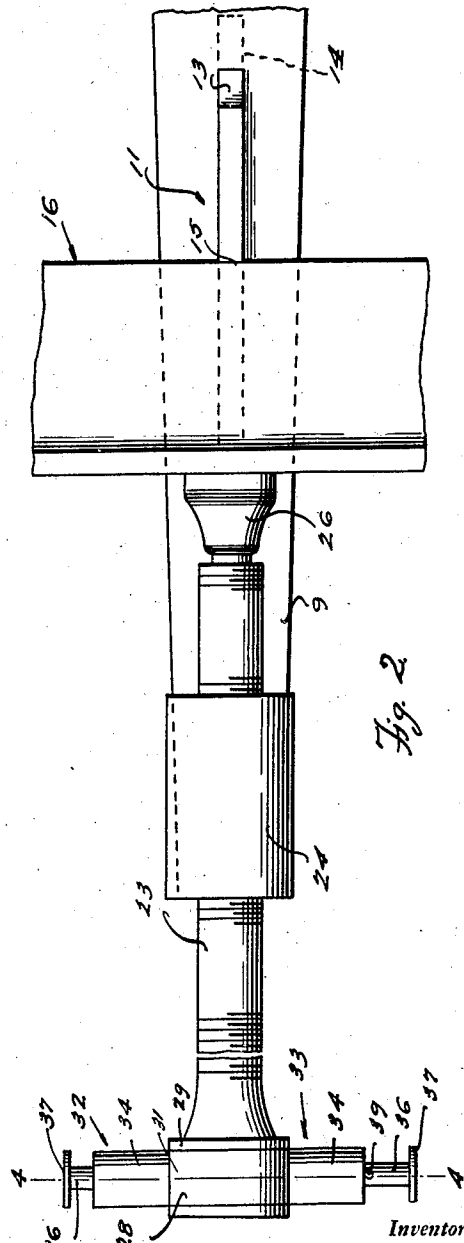


Fig. 2.

WILLIAM GROVER BRYANT,

By

Almon O'Brien
and *Harvey B. Jacobson*
Attorneys

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3 Sheets-Sheet 2

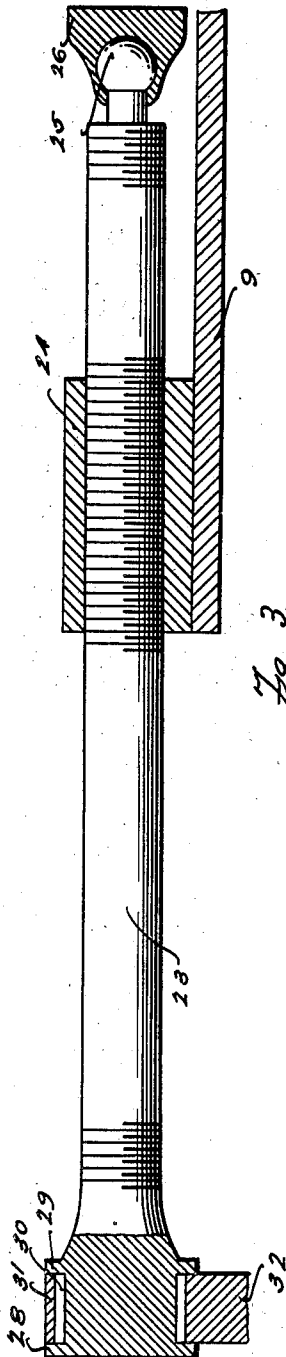


Fig. 3.

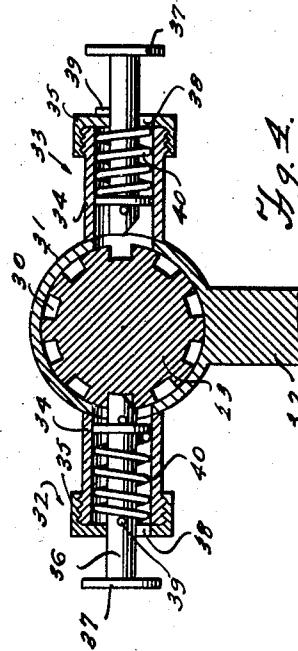


Fig. 4.

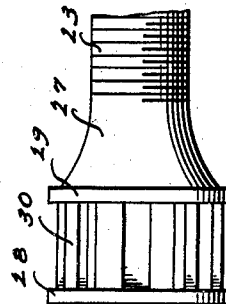


Fig. 5.

Inventor

WILLIAM GROVER BRYANT,

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

March 27, 1945.

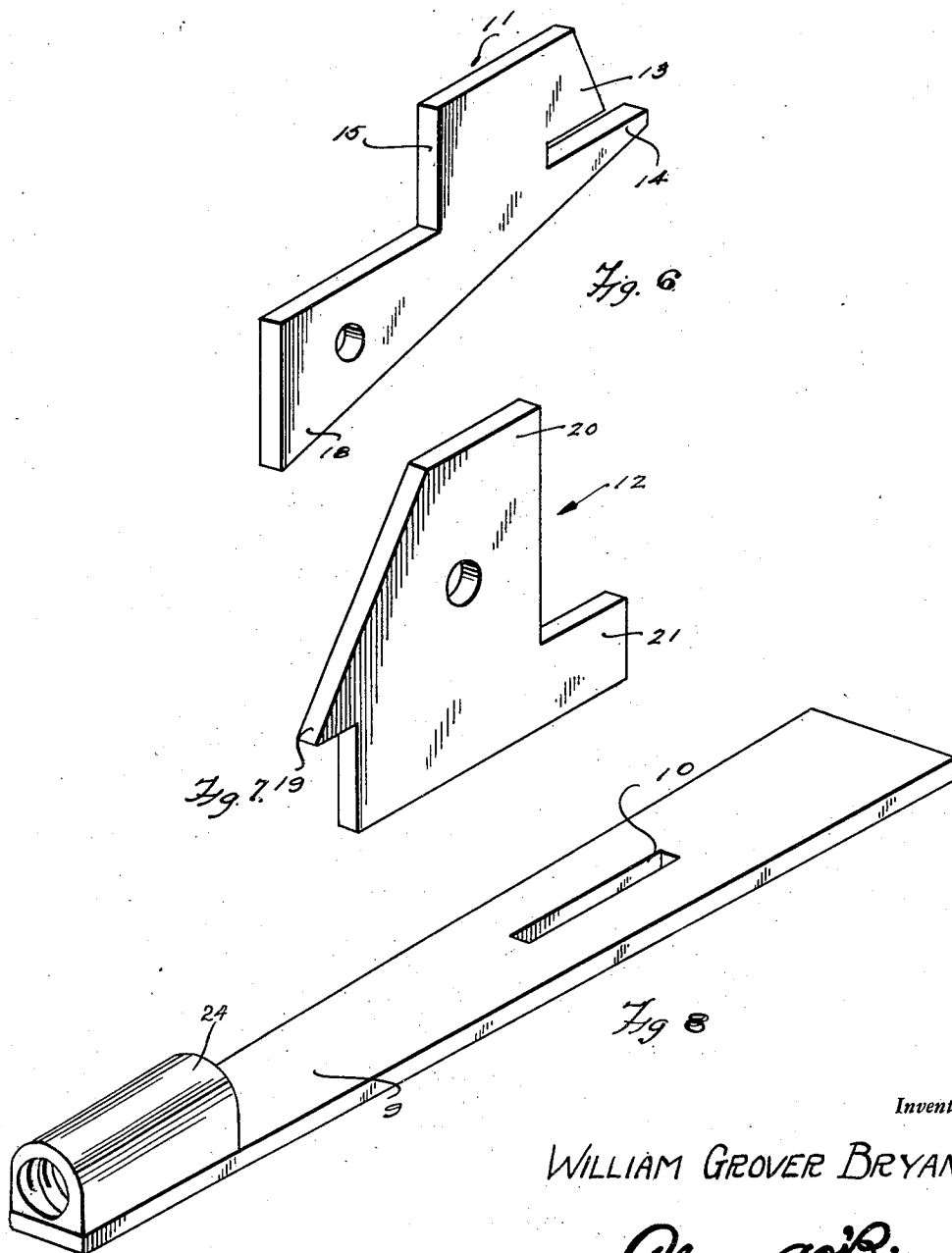
W. G. BRYANT

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3 Sheets-Sheet 3



Inventor

WILLIAM GROVER BRYANT,

By *Clarence A. O'Brien*
and Harvey B. Jackson
Attorneys

UNITED STATES PATENT OFFICE

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SHIPBUILDER'S WORK ASSEMBLING AND
ALIGNING JACK

William Grover Bryant, Brunswick, Ga.

Application April 14, 1944, Serial No. 531,076

4 Claims. (Cl. 254—133)

This invention relates to a novel and improved shipbuilder's jack expressly constructed and designed to expedite the placement and proper aligning of shell irons and beams in relation to deck beams, whereby to assemble such parts in readiness for subsequent fastening.

Needless to say, I am aware that many different types of devices, including so-called "jacks" have been evolved and brought into use to save manhours, to reduce laborious effort and to expedite assembling and aligning of ship parts. Having in mind the same general purposes and objects I have, after much study and thought, devised what is believed to be a new type of jack-equipped assembling device, the same being characterized by adaptability to the task being served, being substantially fool-proof and, therefore, satisfactorily usable by comparatively green hands, and otherwise aptly suited and fitted for the particular purposes intended.

More specifically, and in carrying out the principles of the invention I have evolved a novel structural assemblage characterized by an adapter plate provided with an end thrust and pressure jack, said plate having one end portion adapted for disposition between the adjacent ship parts and being constructed to accommodate abutments and aligning fixtures such as co-act with said parts in suitably aligning the same for final assembly purposes.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevational view of the jack-equipped structural device as constructed in accordance with the principles of this invention showing the manner in which it is used.

Figure 2 is a top plan view of the same.

Figure 3 is an enlarged fragmentary sectional and elevational view detailing the jack means.

Figure 4 is an enlarged section on the plane of the line 4—4 of Figure 2.

Figure 5 is a fragmentary end view of the ratchet head on one end of the shank of the jack.

Figures 6 and 7 are perspective views of interchangeable alternative forms of inserts or beam assembling and aligning fixtures.

Figure 8 is a perspective view of the adapter plate per se, this disclosing, at one end, the jack mount.

Referring now to the drawings by distinguish-

ing reference numerals it will be seen that the adapter frame 9 in Figure 8 is in the form of a substantially wedge-shaped flat plate having a longitudinally slot 10 at a predetermined point.

This slot is adapted to accommodate the removable fixtures or inserts shown in Figures 6 and 7. One type is indicated at 11 and the other at 12. The insert 11 is bifurcated at one end to form distinguishable furcations 13 and 14, the tip portion of the furcation 14 extending beyond the adjacent end of the furcation 13. The body portion 15 constitutes a step or riser, this to engage the adjacent edge portion of the horizontal shell iron or beam 16 to be placed above and assembled in relation to the lower beam 17 as brought out in Figures 1 and 2. The left-hand end portion of the fixture 11 slips through the slot 10, the furcations disposed above and below the slot, that is, after the device 11 is shifted over in relation to the slot as brought out in the drawings. The trailing extension 18 also serves as a guide abutment, this engaging the web of the beam 17.

The fixture 12 is also constructed to coact with the slot whenever its use is required. It includes a detent or retaining extension 19 and beam engaging upper and lower abutments 20 and 21.

The jack is denoted by the numeral 22 and has its threaded shank 23 threaded through and workable in the internally screw-threaded mount or sleeve 24 mounted on the outer end of the adapter plate 9. The inner end of the jack is provided with a ball-joint element 25 (see Figure 3) carrying a swivelled work-engaging head 26. The opposite outer end of the jack is provided with an enlarged head portion 27 (see Figure 5) having spaced outstanding annular flanges 28 and 29 with intervening rack or ratchet teeth 30 therebetween. As brought out in Figure 4, a collar or annular band 31 rotatably surrounds the teeth and is provided with an operating handle 32. Diametrically opposite latches are employed for rotating the shank of the jack in the desired direction. For convenience these are differentiated by the numerals 32 and 33, one being disengaged when the other is engaged as shown in the illustration in Figure 4. Each pawl or latch is the same in construction and the description of one will suffice for both. That is to say, each unit includes a sleeve 34, a screw cap 35, a pawl 36 slidable through the cap and having a finger-grip or head 37. The cap 36 is provided with a slot 38 and the stem of the pawl is provided with a retaining

pin 39 for compressing the spring 40 and holding the pawl disengaged as shown to the right in Figure 4. That is to say, this particular pawl 33 is disengaged while the pawl 32 is engaged. The inner end of the pawl is of beveled form to coact with the ratchet teeth 30. Thus, we have a convenient pawl and ratchet means for driving the shank of the jack in either direction depending on whether the jack is to be screwed in or out, as the case may be.

In practice, it is the purpose of the invention to adjust and align the part 16, which we will call a shell beam, with the relatively stationary part 17 for securing said parts, ultimately, in assembled relationship. The adapter plate slips between the two parts and the insert or fitting 11 is placed through the slot in the adapter plate. One abutment 15 engages the flange of the beam 16 and the other abutment 18 rests against the part 17. Thus, the part 11 is in a sense a template for assuredly lining up the two parts 16 and 17 before they are brought together, the part 16 by operation of the jack on the same adapter plate.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Minor changes in the shape, size and arrangement of details coming within the field of in-

vention claimed may be resorted to in actual practice, if desired.

Having described the invention, what is claimed as new is:

5 1. In a work adjusting, aligning and assembling jack of the class described, an adapter plate adapted for disposition between coacting ship parts, means on one end of the plate for simultaneously engaging predetermined areas of said parts for aligning the same, and a thrust jack 10 on the adapter plate for engaging one of the parts to forcibly place it in proper position.

2. In a jack construction of the class described, a plate, a jack mounted on one end of the plate, 15 the plate being slotted at its opposite end to accommodate interchangeable detachable abutment fittings.

3. In a jack construction of the class described, a plate, a jack mounted on one end of the plate, 20 the plate being slotted at its opposite end to accommodate interchangeable detachable abutment fittings, said fittings embodying abutments for simultaneously engaging adjacent areas of the two parts to be brought together in assembled 25 relationship for fastening.

4. In a ship builder's jack of the class described an insertable and removable adapter plate having an adapter slot at one end, a detachable abutment equipped insert coacting with said slot 30 and a jack having a pawl and ratchet handle structure including selectively usable pawls.

WILLIAM GROVER BRYANT.